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# ANALYZING PRE-PRODUCTIVE EXPENSING OPTIONS FOR DAIRY FARMS

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# ANALYZING PRE-PRODUCTIVE EXPENSING OPTIONS FOR DAIRY FARMS

## Executive Summary

The Tax Reform Act of 1986 has instituted new regulations of accounting for costs on assets having pre-productive periods. Farm assets covered by these regulations include dairy heifers raised to replace cows. When filing their 1987 tax returns, dairy farmers must select one of two methods of expensing all costs from the time a dairy heifer conceives until it freshens for the first time. Alternatives are:

1. an expensing option. Costs during the pre-productive period are expenses as they are incurred. If this option is selected, all assets purchased after 1987 must be depreciated using slower rates than those possible under the second option.

2. a capitalization option. Costs during the pre-productive period are capitalized (i.e., accumulated) until the heifer freshens for the first time. Once the heifer freshens, all capitalized costs are depreciated.

The purpose of this paper is to analyze the two options as they apply to dairy farms. During the next three to five years, selection of the capitalization option will result in higher taxable incomes, thus leading to higher tax liabilities. Increases in taxable income during 1987 could by in the range of $10,000 for a farm having 80 cows that raises 90 percent of its replacements. These increases occur because depreciation resulting from capitalized costs on raised dairy heifers will be relatively small during this period. After three to five years, however, the capitalization option will yield lower taxable incomes because faster depreciation rates can be used on all asset purchases.

Due to the slower depreciation schedules associated with the expensing option, the financial incentives for choosing the capitalization option increase as asset investment increases. Included within the paper is an incremental framework for analyzing the financial tradeoffs of the two options.

The framework, which is given in a Lotus 1-2-3 spreadsheet, can be used to calculate a yearly machinery and equipment investment (MEI) level that equates the net present values (NPV) of the two options. MEI above the break-even level indicates that the capitalization option should be chosen, while MEI below the break-even level indicates that the expensing option should be chosen.

Break-even levels increase as the (1) number of cows in the herd increase, (2) percentage of replacement heifers raised on the farm increases, and (3) amount of costs which must be capitalized increases. As a general rule farmers should probably choose the capitalization option. Break-even MEI levels are fairly close to average total investment made by dairy farmers. However, specific instances exist in which the expensing option is the better alternative. For example, the expensing option is preferred when a farmer is near retirement, has no off-spring that will continue farming, and plans to invest small amounts in assets.

# ANALYZING PRE-PRODUCTIVE EXPENSING OPTIONS FOR DAIRY FARMS

The Tax Reform Act of 1986 has created regulations instituting new methods of accounting for costs on assets having pre-productive periods. Farm assets covered by these regulations include dairy heifers raised to replace cows. For dairy heifers the pre-productive period begins at the heifer's conception and ends when the heifer freshens. Farmers must select between two methods of accounting for pre-productive expenditures. Alternatives are:

1. an expensing option. Pre-productive costs are expensed as they are incurred. This option is a continuation of the way pre-productive costs have been handled previous to the Tax Reform Act of 1986. If this option is selected, all assets purchased after 1987 must be depreciated using slower rates than those possible under the capitalization option.

2. a capitalization option. Pre-productive costs are capitalized (i.e., accumulated) from the heifer's conception until the first freshening. Costs which must be capitalized include direct costs -- feed, veterinary expenses, etc., and indirect expenses -- building and equipment depreciation, taxes, etc. After freshening, capitalized costs are depreciated over the heifer's productive life.

One of these options must be selected when filing the 1987 tax return and cannot be changed thereafter. Which option is chosen may have a large impact on a dairy farm's taxable income. In general, choosing the capitalization option will result in higher taxable incomes during the next three to five years. During this period, depreciation resulting from raised heifers will be low due to small depreciation bases on raised heifers. After three to five years the capitalization option will yield lower taxable incomes because faster depreciation methods can be used on asset purchases.

The purpose of this paper is to analyze each options effects on a dairy farm's taxable income. To accomplish this, a general description on the two options is provided in the next section. The second section entitled "Analyzing the Pre-Productive Expensing Options" provides a simple framework

for analyzing each option, with the framework given in a Lotus 1-2-3 worksheet. The third section gives results derived using the worksheet and provides guidance for selecting between the two options.

## The Capitalization and Expensing Options

Various attributes of the two options are listed in Table 1. A major difference involves expensing of pre-productive costs. Under the capitalization option, all costs during a heifer's pre-productive period must be capitalized and added to income in the year that the costs are incurred. After the heifer freshens, the total amount of capitalized costs -- that is, the capitalized value -- is depreciated over the life of the cow. Under the expensing option, a capitalized value for each raised dairy heifer also must be calculated. However, capitalized costs are not deducted from income and capitalized values are not depreciated. Capitalized values are only used to calculate capital gains at the time of the cow's sale.

Capitalized costs can be determined by dividing heifers into age groups. For example, three groups could be used: 1) calves -- heifer calves less than one year of age, 2) yearlings -- heifers between one and two years of age, and 3) two-year olds -- heifers greater than two years of age. Each group then is given a per-animal value representing either total accumulated costs, what the I.R.S. labels the unit-livestock method, or the group's market value, the farm-price method. Continuing the above example, calves, yearlings, and two-year olds could be given values of $125, $375, and $500, respectively.

Capitalized costs for an animal equal the difference between the values of its current age group and its previous age group. For the example presented, calves have $125 capitalized costs, yearlings have $250 of capitalized cost

(i.e., $375 for yearlings minus $125 for calves), and two-year olds have $125 of capitalized costs (i.e., $500 value for two-year old less $375 yearlings). Total capitalized costs then equal the number of raised heifers in each category times the amount of capitalized costs for the respective categories.

Under the capitalization option, total capitalized costs are added to income. They will approximately equal the number of heifers freshening times the value for heifers ready to enter the dairy herd, assuming that replacements enter the herd at a relatively stable rate. If, for example, a farm has 80 dairy cows, a .30 annual cull rate, and raises all replacements, a total of 24 new replacements will be needed each year. Total capitalized expenses equal $12,000 using a $500 value for two-year old heifers. Once a heifer freshens, the capitalized value of the heifer must be depreciated.

Which option is chosen also effects the depreciation schedules that can be used. Under the capitalization option, modified accelerated cost recovery system (MACRS) and alternative MACRS are available while only alternative MACRS schedules are available under the expensing option. Table 2 shows differences in the two depreciation systems. Columns two and three respectively show the MACRS and alternative MACRS schedules for breeding animals. The latter two columns give the MACRS and alternative MACRS schedules for farm machinery and equipment investment.

If the expensing option is chosen, the slower, alternative MACRS must be used for all real asset purchases. Assets covered not only include acquisitions related to the farming operation, but all other depreciable assets owned by family members (i.e., husband, wife, and children under eighteen years of age). Thus selecting the expensing option locks all asset purchases into slower depreciation schedules. Moreover, the alternative MACRS schedules must

be used by future generations owning the farming operation. For example, if a father chooses the expensing option and his son/daughter takes over the operation, the son/daughter must use the alternative MACRS schedule.

Capital gains must be calculated at the time of a raised dairy cow's sale under both options. Under the capitalization option, capital gains will equal the sale price less the dairy cow's basis, where the basis equals the capitalized value less depreciation taken in previous years. Capital gains under the expensing option will equal the sale value less the capitalized value at the time the animal is placed into production. In addition, the capitalized value is ordinary income at the time of the sale.

## Analyzing the Pre-Productive Expensing Operations

A simple Lotus 1-2-3 spreadsheet was developed to examine the above two options' effects on taxable income. This worksheet is based on an incremental analysis, considering only differences in taxable flows from the two options. The worksheet basically analyzes the tradeoffs between early, high taxable incomes associated with the capitalization option and the slower depreciation schedules associated with the expensing option.

Calculations are based on the following assumptions:

1. The dairy farm maintains a stable herd size in all years.
2. Replacement heifers enter the herd at a constant rate.
3. Older cows are culled from the herd before younger cows are culled.
4. Cull rates and prices remain the same in all years.
5. MACRS schedules are used for the capitalization option.

The worksheet is divided into two sections. The first calculates differences in taxable incomes resulting from the dairy herd while the second considers machinery and equipment investment.

Taxable incomes from the dairy herd

Entries necessary for the dairy herd taxable income calculations are shown in figure 1. (All figures contained in this section are generated by the worksheet). Entries can be divided into three sets. The first set determines the total number of replacement heifer needed, and the number that are raised and purchased. Entries include the number of cows in the herd (line A), herd cull rate (line B), and the percent of heifers raised on the farm (line C). The second set of inputs gives values of differing aged raised heifers for capitalization purposes. Heifers are grouped into three categories: calves -- heifers less than one year old, yearlings -- heifers between one and two years of age, and two-year olds -- heifers that are ready to enter the dairy herd. Values for these three groups are respectively entered on lines D through F. The third set gives market prices. The price of purchased dairy heifers (line G) gives the basis for depreciating dairy heifers. Average market price of cull cows (line H) is used to calculate capital gains from cull cow sales.

Calculations based on these inputs include the number of raised and purchased dairy heifers entering the herd each year, the average life of the dairy cow, and the values of raised and purchased dairy heifers for tax purposes. These values are shown in figure 2.

Entries and values in figures 1 and 2 are then used to calculate taxable flows arising under the capitalization option as shown in figure 3. Panel A

gives taxable flows for raised dairy heifers. These values are given for heifers entering the herd in 1987 through 1991 as respectively indicated by the heading across the top of the columns. The first line gives the capitalized value. Note that these values increase from $2,880 in 1987 to $11,520 in 1989. Capitalized values equal the accumulation of previously declared capitalized costs. In 1987, only those costs associated with 1987 enter into the capitalized value. The 1988 value contains costs for both 1987 and 1988 while the 1989 capitalized value contains costs for 1987 through 1989. After 1989, capitalized values remain constant because a heifer's per-productive period is less than three years.

In each year, the capitalized value serves as the basis for calculating depreciation using the MACRS schedule shown in column 2 of table 2. Resulting yearly depreciation amounts are shown in panel A, with yearly total depreciation from raised dairy animals given in the "total" column. (Total depreciation values are only given up to 1991 because this figure does not contain depreciation amounts for animals entering the herd after 1991.) Subtracting depreciation from the capitalized value results in the basis at the time of sale. These values, shown on the "CV less depreciation" line, reduce taxable income in the year of the sale. This occurs because the basis is subtracted from cull cow receipts resulting in capital gains (losses).

Panel B gives taxable flows for purchased dairy heifers. The first line shows values on which depreciation is taken. These values equal the purchase price of the heifers. Depreciation and basis calculation for purchased heifers are the same as those for raised heifers.

Figure 4 summarized taxable flows for the capitalization option. Panel A totals yearly depreciation and basis amounts for raised and purchased animals.

Total changes in taxable income are then found in panel B by subtracting yearly depreciation and basis figures from capitalized expenses (the amount capitalized each year). Results are reported in the total column, with positive numbers indicating increases in taxable incomes and negative numbers representing decreases.

Taxable flows resulting from the expensing option are shown in figure 5. Since costs for raised animals are expensed immediately, this option only considers taxable flows for purchased heifers. Depreciation and basis values for purchase animals are calculated in the same manner as those under the capitalization option with one important difference. Under the expensing option, the alternative MACRS depreciation schedule must be used rather than the MACRS depreciation schedule.

Yearly differences in taxable incomes between the capitalization and expensing option are then reported in the column (2) of figure 6. These values equal the capitalization option's taxable income minus the expensing option's taxable income. Positive numbers indicate that the capitalization option yields higher taxable incomes than does the expensing option. Over time the differences between the two options will approach zero. For the example presented, the options generate the same taxable income by 1992.

Consideration of machinery and equipment investment (MEI)

Figure 6 is also used to integrate other asset investments into the analysis based on a yearly amount of machinery and equipment investment (MEI). MEI is an entry in line Q of the report. The MACRS and alternative MACRS depreciation schedules are then used to calculate yearly depreciate for the capitalization and expensing options, respectively. Column (3) reports

differences in depreciation for the two options, with negative numbers indicating that the capitalization option results in lower taxxable income than does the expensing option. The total column (column (4)) seems column (2) and (3), giving estimates of yearly total differences in taxable incomes.

A crude estimate of the differences in taxable income resulting from the two options is given in column (5). These figures equal the difference in taxable income (column (4)) times the marginal tax rate entered on line P. Based on income tax differences, differences in net present values (NPV) of the options are given on line S using the discount rate on line R. A positive NPV difference indicates that discounted taxes for the capitalization option are greater than the discounted taxes for the expensing option. Conversely, a negative NPV indicates that the capitalization option generates less discounted taxes than does the expensing option.

The final two lines of this report give average capital gains under the capitalization option and the expensing option. In general, the capitalization option generates higher amounts of capital gains. As tax law currently stands, capital gains and ordinary income are taxes at the same rate. However, in the future, capital gains may be taxed at a lower rate. For example, up to 1986, only forty percent of the total capital gain was taxed. Institution of a similar rule in the future would favor the capitalization option.

## Comparison of the Capitalization and Expensing Options

The above worksheet was used to analyze the relative favorableness of the two options under differing conditions. To accomplish this comparison, entries shown in figure 1 were used as a base scenario. For this scenario, machinery and equipment investment (MEI) was varied until the NPV difference equaled

zero, which occurred at a MEI of $15,500. This MEI level serves as a break-even amount: the NPV criterion indicates indifference between the two options. The capitalization option is preferred when MEI exceeds the break-even amount and the expensing option is preferred when MEI is less than the break-even amount.

Figure 7 shows the effects of differing herd cull rates and percentages of heifers raised on break-even MEI levels. A line within the figure gives break-even MEI levels for a fixed herd cull rate and differing percent of heifers raised, as indicated on the horizontal axis. For example, the dotted line gives break-even MEI levels for a .32 cull rate. The break-even MEI investment level is approximately $4000 when 50 percent of the heifers are raised, and $18,000 when 100 percent of the heifers are raised. Note that the percent of heifers raised has a dramatic effect on break-even MEI levels. As the percent increases, the amount of depreciation from purchased heifers decreases, thus favoring the expensing option. Also, note that higher cull rates lead to larger break-even MEI levels. Higher cull rates require additional replacement heifers leading to higher amounts of capitalized expenses for a given percent of heifers raised, again favoring the expensing option.

Prices used when determining capitalization values have a large effect on the relative favorableness of the two options. To illustrate this, the value attached to two-year olds was varied from $500 to $800 while proportionately increasing the other two prices. Break-even MEI levels for a $500, $600, $700, and $800 are $15,500, $18,800, $22,000, and $25,300, respectively. These large increases suggest that the lowest possible values should be attached to dairy heifers if the capitalization option is chosen.

Calf and yearly heifer prices also have a large impact on break-even MEI levels. If, for example, these two values are reduced to zero, the break-even MEI level declines from $15,500 to $9,500. This suggests that a good strategy under the capitalization option is to have low values for pre-productive heifers (i.e., prices for heifers not ready to enter the herd). In so doing depreciation bases are built up more quickly.

## Summary and Conclusions

This paper explained the capitalization and expensing options faced by dairy farmers, gave a simple framework for analyzing the options, and compared the relative favorableness of the two options. If the capitalization option is selected, low capitalization prices generally result in smaller taxable incomes.

As a general rule farmers should probably choose the capitalization option. Break-even MEI levels are fairly close to average total investments made by dairy farmers. (Consideration of assets having longer termed depreciation schedules would enhance the attractiveness of the capitalization option.) Choosing this option maintains the possibility of benefiting from preferential capital gains tax treatment. However, specific instances exist when the expensing option is better. A specific instance occurs when a farmer is ready to retire, has no off-spring continuing the operation, and plans to invest small amounts in assets.

Table 1. Features of the Capitalization and Expensing Options

| | Feature | Capitalization Option | Expensing Option |
|---|---|---|---|
| 1. | Treatment of pre-productive expenses | capitalized | expensed |
| 2. | Calculation of capitalized values | yes | yes |
| 3. | Depreciation of capitalized values | yes | no |
| 4. | Available depreciation schedules | MACRS Alt-MACRS | Alt-MACRS |
| 5. | Capital gains calculation at time | yes[1] | yes[2] |

[1]Capital gain equals sale value less basis (capitalized value less depreciation taken).

[2]Capital gain equals sales value less capitalized value.

Table 2. MACRS and Alt-MACRS Depreciation Schedules

| Year (1) | BREEDING ANIMALS MACRS (2) | BREEDING ANIMALS Alt-MACRS (3) | MACHINERY AND EQUIPMENT MACRS (4) | MACHINERY AND EQUIPMENT Alt-MACRS (5) |
|---|---|---|---|---|
| 1 | 20.00 | 7.14 | 14.28 | 5.00 |
| 2 | 32.00 | 14.28 | 24.49 | 10.00 |
| 3 | 19.20 | 14.28 | 17.49 | 10.00 |
| 4 | 11.52 | 14.28 | 12.49 | 10.00 |
| 5 | 11.52 | 14.28 | 8.93 | 10.00 |
| 6 | 5.76 | 14.28 | 8.93 | 10.00 |
| 7 | | 14.28 | 8.93 | 10.00 |
| 8 | | 7.18 | 4.46 | 10.00 |
| 9 | | | | 10.00 |
| 10 | | | | 10.00 |
| 11 | | | | 5.00 |
| Total | 100.00 | 100.00 | 100.00 | 100.00 |

Figure 1. Dairy Herd Inputs

| Line no. | Entry | Description |
|---|---|---|
| A | 80 | Number of dairy cows in herd |
| B | 32% | Herd cull rate |
| C | 90% | Percent of heifers raised on the farm |
| | | Value for capitalization purposes |
| D | $125 | calves -- heifers less than one year old |
| E | $375 | yearlings -- heifers between one and two years of age |
| F | $500 | two-year olds -- heifers ready to enter dairy herd |
| G | $800 | Price of a purchased dairy heifers |
| H | $350 | Cull cow price |

Figure 2. Dairy Herd Calculated Values

| Line no. | Value | Description |
|---|---|---|
| | | Number of: |
| I | 25.6 | heifers entering the herd each year (A*B) |
| J | 23.0 | raised heifers entering the herd each year (I*C) |
| K | 2.6 | purchased heifers entering the herd each year (I - J) |
| L | 3.13 | Average number of years a cow is in the herd (1/B) |
| | | Value for tax purposes of: |
| M | $11,520 | raised heifers entering herd (J*F) |
| N | $2,048 | purchased heifers entering herd (K*G) |
| O | $13,568 | heifers entering herd (M + N) |

Figure 3. Taxable Flows for the Capitalization Option

PANEL A. TAXABLE FLOWS FOR RAISED DAIRY HEIFERS

| | | ---- year heifer enters the herd --- | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1987 | 1988 | 1989 | 1990 | 1991 | total |
| Capitalized value (CV) | | 2880 | 8640 | 11520 | 11520 | 11520 | xxxxxx |
| Depreciation in: | 1987 | 576 | | | | | 576 |
| | 1988 | 922 | 1728 | | | | 2650 |
| | 1989 | 553 | 2765 | 2304 | | | 5622 |
| | 1990 | 0 | 1659 | 3686 | 2304 | | 7649 |
| | 1991 | 0 | 0 | 2212 | 3686 | 2304 | 8202 |
| | 1992 | 0 | 0 | 0 | 2212 | 3686 | xxxxxx |
| | 1993 | | 0 | 0 | 0 | 2212 | xxxxxx |
| | 1994 | | | 0 | 0 | 0 | xxxxxx |
| | 1995 | | | | 0 | 0 | xxxxxx |
| | 1996 | | | | | 0 | xxxxxx |
| CV less depreciation | | 829 | 2488 | 3318 | 3318 | 3318 | |
| Basis in sale year: | | | | | | | |
| | 1987 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1988 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1989 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1990 | 829 | 0 | 0 | 0 | 0 | 829 |
| | 1991 | 0 | 2488 | 0 | 0 | 0 | 2488 |

Figure 3. Taxable Flows for the Capitalization Option

PANEL B. TAXABLE FLOWS FOR PURCHASED HEIFERS

| | | ---- year heifer enters the herd --- | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1987 | 1988 | 1989 | 1990 | 1991 | total |
| Value | | 2048 | 2048 | 2048 | 2048 | 2048 | xxxxxx |
| Depreciation in: | 1987 | 410 | | | | | 410 |
| | 1988 | 655 | 410 | | | | 1065 |
| | 1989 | 393 | 655 | 410 | | | 1458 |
| | 1990 | 0 | 393 | 655 | 410 | | 1458 |
| | 1991 | 0 | 0 | 393 | 655 | 410 | 1458 |
| | 1992 | 0 | 0 | 0 | 393 | 655 | xxxxxx |
| | 1993 | | 0 | 0 | 0 | 393 | xxxxxx |
| | 1994 | | | 0 | 0 | 0 | xxxxxx |
| | 1995 | | | | 0 | 0 | xxxxxx |
| | 1996 | | | | | 0 | xxxxxx |
| Value less depreciation | | 590 | 590 | 590 | 590 | 590 | |
| Basis in sale year: | | | | | | | |
| | 1987 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1988 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1989 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1990 | 590 | 0 | 0 | 0 | 0 | 590 |
| | 1991 | 0 | 590 | 0 | 0 | 0 | 590 |

Figure 4. Summary of Taxable Flows for the Capitalization Option

PANEL A. TOTAL YEARLY DEPRECIATION AND BASIS AMOUNTS

| | ---- Depreciation ---- | | | Basis in Sale Year | | |
|---|---|---|---|---|---|---|
| Year | Raised | Pur-chased | Total | Raised | Pur-chased | Total |
| 1987 | 576 | 410 | 986 | 0 | 0 | 0 |
| 1988 | 2650 | 1065 | 3715 | 0 | 0 | 0 |
| 1989 | 5622 | 1458 | 7080 | 0 | 0 | 0 |
| 1990 | 7649 | 1458 | 9107 | 829 | 590 | 1419 |
| 1991 | 8202 | 1458 | 9660 | 2488 | 590 | 3078 |
| 1992 | 8202 | 1458 | 9660 | 3318 | 590 | 3908 |
| 1993 | 8202 | 1458 | 9660 | 3318 | 590 | 3908 |
| 1994 | 8202 | 1458 | 9660 | 3318 | 590 | 3908 |
| 1995 | 8202 | 1458 | 9660 | 3318 | 590 | 3908 |
| 1996 | 8202 | 1458 | 9660 | 3318 | 590 | 3908 |
| 1997 | 8202 | 1458 | 9660 | 3318 | 590 | 3908 |
| 1998 | 8202 | 1458 | 9660 | 3318 | 590 | 3908 |

Figure 4. Summary of Taxable Flows for the Capitalization Option

PANEL B. TOTAL TAXABLE FLOWS FROM THE CAPITALIZATION OPTION

| Year | Capit. costs | Dep. | Basis | Total |
|---|---|---|---|---|
| 1987 | 11520 | -986 | 0 | 10534 |
| 1988 | 11520 | -3715 | 0 | 7805 |
| 1989 | 11520 | -7080 | 0 | 4440 |
| 1990 | 11520 | -9107 | -1419 | 993 |
| 1991 | 11520 | -9660 | -3078 | -1219 |
| 1992 | 11520 | -9660 | -3908 | -2048 |
| 1993 | 11520 | -9660 | -3908 | -2048 |
| 1994 | 11520 | -9660 | -3908 | -2048 |
| 1995 | 11520 | -9660 | -3908 | -2048 |
| 1996 | 11520 | -9660 | -3908 | -2048 |
| 1997 | 11520 | -9660 | -3908 | -2048 |
| 1998 | 11520 | -9660 | -3908 | -2048 |

Figure 5. Taxable Flows for the Expensing Option

PANEL A. DEPRECIATION AND BASIS AMOUNTS

| | | ---- year heifer enters the herd --- | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1987 | 1988 | 1989 | 1990 | 1991 | total |
| Value | | 2048 | 2048 | 2048 | 2048 | 2048 | xxxxxx |
| Depreciation in: | 1987 | 146 | | | | | 146 |
| | 1988 | 292 | 146 | | | | 439 |
| | 1989 | 292 | 292 | 146 | | | 731 |
| | 1990 | 0 | 292 | 292 | 146 | | 731 |
| | 1991 | 0 | 0 | 292 | 292 | 146 | 731 |
| | 1992 | 0 | 0 | 0 | 292 | 292 | xxxxxx |
| | 1993 | 0 | 0 | 0 | 0 | 292 | xxxxxx |
| | 1994 | 0 | 0 | 0 | 0 | 0 | xxxxxx |
| | 1995 | | 0 | 0 | 0 | 0 | xxxxxx |
| | 1996 | | | 0 | 0 | 0 | xxxxxx |
| | 1997 | | | | 0 | 0 | |
| | 1998 | | | | | 0 | |
| Value less depreciation | | 1317 | 1317 | 1317 | 1317 | 1317 | |
| Basis in sale year: | | | | | | | |
| | 1987 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1988 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1989 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 1990 | 1317 | 0 | 0 | 0 | 0 | 1317 |
| | 1991 | 0 | 1317 | 0 | 0 | 0 | 1317 |

Figure 5. Taxable Flows for the Expensing Option

PANEL B. SUMMARY OF TAXABLE FLOWS FROM THE EXPENSING OPTION

| Year | Dep. | Basis | Total |
|---|---|---|---|
| 1987 | -146 | 0 | -146 |
| 1988 | -439 | 0 | -439 |
| 1989 | -731 | 0 | -731 |
| 1990 | -731 | -1317 | -2048 |
| 1991 | -731 | -1317 | -2048 |
| 1992 | -731 | -1317 | -2048 |
| 1993 | -731 | -1317 | -2048 |
| 1994 | -731 | -1317 | -2048 |
| 1995 | -731 | -1317 | -2048 |
| 1996 | -731 | -1317 | -2048 |
| 1997 | -731 | -1317 | -2048 |
| 1998 | -731 | -1317 | -2048 |

Figure 6. Differences in Taxable Incomes and Income Taxes

| | | |
|---|---|---|
| P | Marginal Tax Bracket | 15.00% |
| Q | Machinery and Equipment Investment | 20000 |
| R | Discount rate | 10.00% |

| Year (1) | DIFFERENCE ON TAXABLE INCOME * Dairy (2) | Dep. (3) | Total (4) | INCOME TAX (5) |
|---|---|---|---|---|
| 1987 | 10681 | -1856 | 8825 | 1324M |
| 1988 | 8244 | -4754 | 3490 | 524 |
| 1989 | 5171 | -6252 | -1081 | -162 |
| 1990 | 3041 | -6750 | -3709 | -556 |
| 1991 | 829 | -6536 | -5707 | -856 |
| 1992 | 0 | -6322 | -6322 | -948 |
| 1993 | 0 | -6108 | -6108 | -916 |
| 1994 | 0 | -5000 | -5000 | -750 |
| 1995 | 0 | -3000 | -3000 | -450 |
| 1996 | 0 | -1000 | -1000 | -150 |
| 1997 | 0 | 0 | 0 | 0 |
| 1998 | 0 | 0 | 0 | 0 |

S NPV DIFFERENCES -1001
AVG. CAPITAL GAINS ON CULL COW SALES
CAPITALIZATION OPTION 5052
EXPENSING OPTION -3877

* ALL DIFFERENCES EQUAL CAPITALIZE OPTION MINUS EXPENSING OPTION

Figure 7. Machinery and Equipment Investment to Have a Break-Even MEI Level.